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(12) **United States Patent**
Hakim

(10) **Patent No.: US 7,243,814 B2**
(45) **Date of Patent: *Jul. 17, 2007**

(54) **NO-SPILL DRINKING CUP APPARATUS**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 355 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **10/083,656**

(22) Filed: **Feb. 25, 2002**

(65) **Prior Publication Data**

US 2002/0179615 A1 Dec. 5, 2002

Related U.S. Application Data

(63) Continuation of application No. 09/271,779, filed on Mar. 18, 1999, now Pat. No. 6,357,620, which is a continuation-in-part of application No. 09/138,588, filed on Aug. 21, 1998, now Pat. No. 6,321,931, application No. 10/083,656, which is a continuation-in-part of application No. 10/001,257, filed on Nov. 27, 2001, now Pat. No. 7,204,386, which is a continuation of application No. 09/138,588, filed on Aug. 21, 1998, now Pat. No. 6,321,931.

(60) Provisional application No. 60/056,218, filed on Aug. 21, 1997, provisional application No. 60/056,218, filed on Aug. 21, 1997.

(51) **Int. Cl.**
A47G 19/22 (2006.01)

(52) **U.S. Cl.** **220/714**; 220/713; 220/203.18

(58) **Field of Classification Search** 220/203.18, 220/713, 714, 717; 215/11.4, 11.5; 137/843, 137/844, 845

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

1,560,689 A 11/1925 Holt et al.

(Continued)

FOREIGN PATENT DOCUMENTS

AU 254125 7/1963

(Continued)

OTHER PUBLICATIONS

Federal Circuit Decision of Feb. 23, 2007 in appeal of *Nouri E. Hakim v. Cannon Avent Group, PLC, et al.* (Appeal No. 05-1398).

(Continued)

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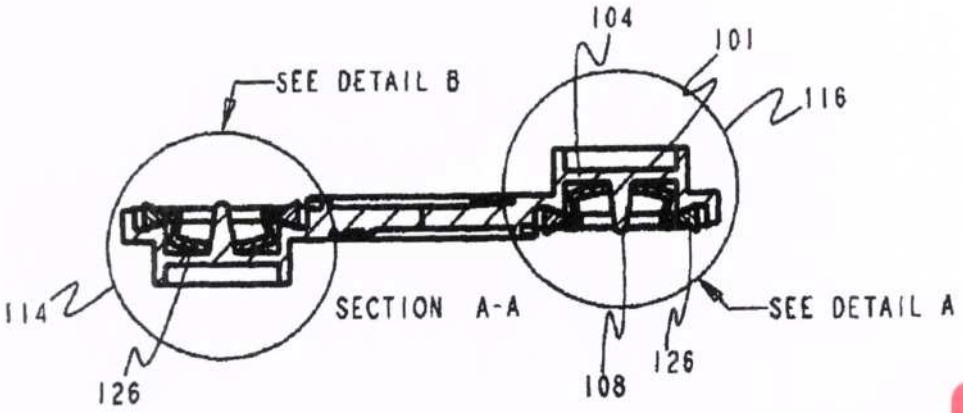
(57) **ABSTRACT**

An improved no-spill cup construction and valve assembly which provides an extremely secure seal against accidental liquid flow from the cup spout. The act of sucking at the cup spout creates negative pressure or a partial vacuum against a valve member near the spout having an opening therein, causing the valve member and opening to move off of a protruding member, thereby unblocking the opening in the valve. When the opening is unblocked, liquid can flow freely through the valve and spout. When not in use, the valve sits in a resting, closed position, with the opening in the valve sitting on a protruding member and pressed against the protruding member's base, sealing off the opening in the valve assembly. The closed position provides an extremely secure seal against fluid leakage, such that inadvertent spills or even deliberate attempts to force liquid outside of the cup, such as by turning the cup upside down, or shaking the cup, are ineffective. The cup assembly further allows variable liquid flow depending on the levels of suction applied, and allows flow to be regulated between regular or maximum flow and minimal flow levels or rates by rotating the position of the valve assembly in the cover of the cup.

64 Claims, 17 Drawing Sheets



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U.S. PATENT DOCUMENTS

1,954,748	A		4/1934	Punta et al.
2,107,442	A		2/1938	Hughes
2,174,361	A		9/1939	Condon
2,223,179	A		11/1940	Lougheed
2,584,359	A	*	2/1952	Miles 215/11.4
3,206,079	A		9/1965	Mancusi, Jr.
3,321,114	A		5/1967	Croyle
3,360,169	A		12/1967	Susuki et al.
3,618,825	A		11/1971	Clarke
3,718,140	A		2/1973	Yamauchi
3,840,153	A		10/1974	Devlin
3,860,162	A		1/1975	Schutz
3,915,331	A		10/1975	Chenault
4,102,476	A		7/1978	Loeffler
4,135,513	A	*	1/1979	Arisland 215/11.4
4,186,842	A		2/1980	Albert
4,324,097	A		4/1982	Schmitt et al.
4,506,809	A		3/1985	Corsette
4,533,062	A		8/1985	Krautkramer
4,600,111	A		7/1986	Brown
4,623,069	A		11/1986	White
4,624,286	A		11/1986	Frohn
4,646,781	A		3/1987	McIntyre et al.
4,871,077	A	*	10/1989	Ogden et al. 215/365
4,941,598	A		7/1990	Lambelet, Jr. et al.
4,946,062	A		8/1990	Coy
4,993,568	A		2/1991	Morifuji et al.
5,033,647	A		7/1991	Smith et al.
5,050,758	A	*	9/1991	Freeman et al. 220/714
5,079,013	A		1/1992	Belanger
5,101,991	A		4/1992	Morifuji et al.
5,101,992	A		4/1992	Serre
5,186,347	A		2/1993	Freeman et al.
5,213,236	A		5/1993	Brown et al.
D339,197	S		9/1993	Ziegler
5,244,105	A		9/1993	Serre
5,250,266	A		10/1993	Kanner
5,339,995	A		8/1994	Brown et al.
RE34,725	E		9/1994	Braden
5,363,983	A		11/1994	Proshan
5,377,877	A		1/1995	Brown et al.
5,388,615	A		2/1995	Edlund et al.
5,409,144	A		4/1995	Brown et al.
5,433,328	A	*	7/1995	Baron et al. 215/11.4
5,439,143	A		8/1995	Brown et al.
5,542,670	A		8/1996	Morano
5,582,315	A		12/1996	Reid
5,607,073	A	*	3/1997	Forrer 215/11.4
5,609,582	A		3/1997	Krutten
5,651,471	A	*	7/1997	Green 220/231
5,702,025	A		12/1997	Di Gregorio
5,706,973	A		1/1998	Robbins, III et al.
5,769,285	A		6/1998	Upham et al.
5,784,999	A		7/1998	Larson et al.
5,788,097	A		8/1998	McInnes
5,791,510	A		8/1998	Paczonay
5,797,505	A		8/1998	Kaura
5,839,614	A		11/1998	Brown
5,890,619	A		4/1999	Belanger
5,890,620	A		4/1999	Belcastro
5,890,621	A		4/1999	Bachman et al.
5,897,013	A		4/1999	Manganiello
6,050,445	A	*	4/2000	Manganiello 220/714
6,112,919	A		9/2000	Ho
6,161,710	A		12/2000	Dieringer et al.
6,230,923	B1		5/2001	Hung
6,269,968	B1		8/2001	Belcastro
6,305,570	B1		10/2001	Atkin et al.
6,321,931	B1		11/2001	Hakim
6,343,704	B1		2/2002	Prentiss
6,994,225	B2		2/2006	Hakim
2002/0011583	A1		1/2002	Getzewich et al.
2002/0063103	A1		5/2002	Kleman

FOREIGN PATENT DOCUMENTS

CN	2163781	Y	5/1994
DE	450685		10/1927
DE	678888		7/1939
DE	1018740		10/1957
DE	6946466	U	2/1970
DE	2024427		12/1971
DE	2634226	A1	2/1978
DE	27 04 164	A	8/1978
DE	295 00 819.9	U1	3/1995
DE	195 10 007	A1	10/1995
DE	296 08 342	U1	7/1996
DE	297 06 653	U1	7/1997
EP	0388828		9/1990
EP	A 0 388 828	A1	9/1990
EP	0 473 994	A2	3/1992
FR	780094		4/1935
FR	2 305 361	A	10/1976
FR	2373740		7/1978
FR	2605293		4/1988
FR	2717778		9/1995
GB	379428		9/1932
GB	752796		7/1956
GB	1301755		1/1973
GB	1448427		9/1976
GB	1 593 084		7/1981
GB	2 169 210		7/1986
GB	2 215 318		9/1989
GB	2 258 860	A	2/1993
GB	2 266 045	A	10/1993
GB	2 279 130		12/1994
IT	594286		5/1959
NL	1 005 120	C	7/1998
WO	WO 95/10965		4/1995

OTHER PUBLICATIONS

Magistrate's Report and Recommendation of Feb. 2, 2005 re U.S. Patent No. 6,321,931, (U.S. District Court, W.D. Louisiana, Civ. 3-02-1371).

Magistrate's Report Recommendation of Feb. 2, 2005 re U.S. Patent No. 6,357,620 (U.S. District Court, W.D. Lousiana, Civ. 3-02-1371).

ISR from PCT/US98/17379.

ISR from PCT/US99/19238.

EPO Search fm EP98943302.

EPO Search fm EP98943860.

* cited by examiner

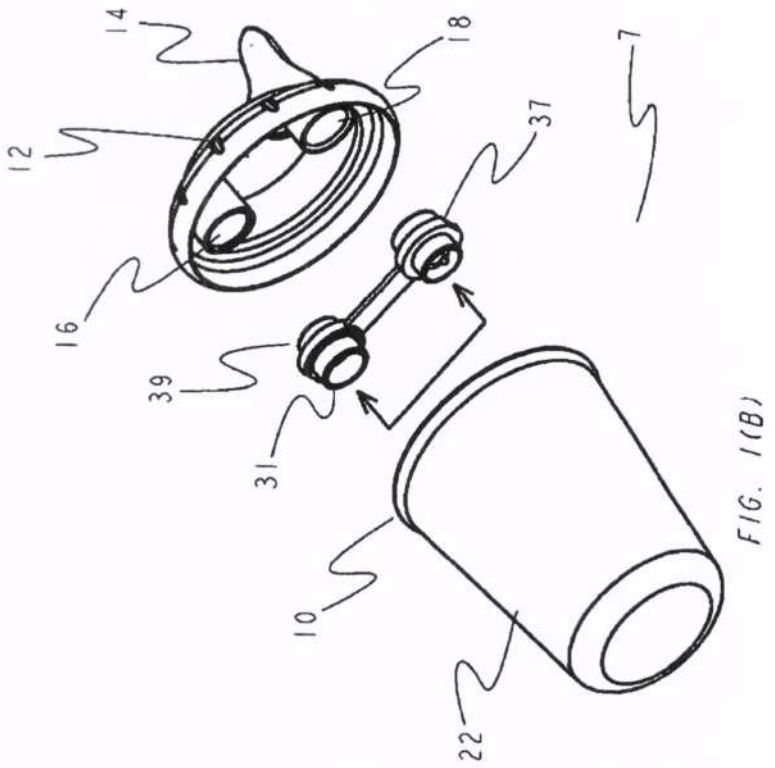


FIG. 1(B)

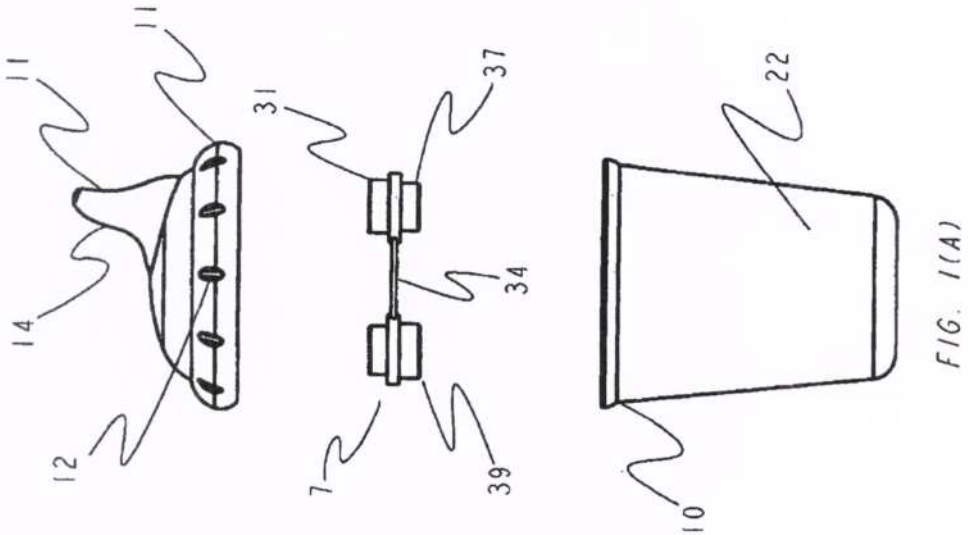


FIG. 1(A)

FIGURE 1

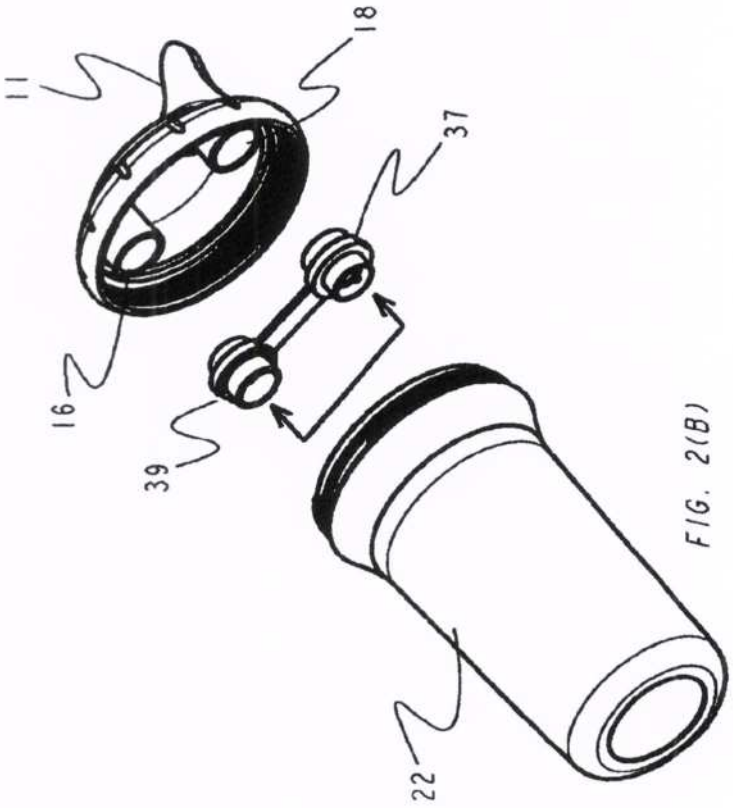


FIG. 2(B)

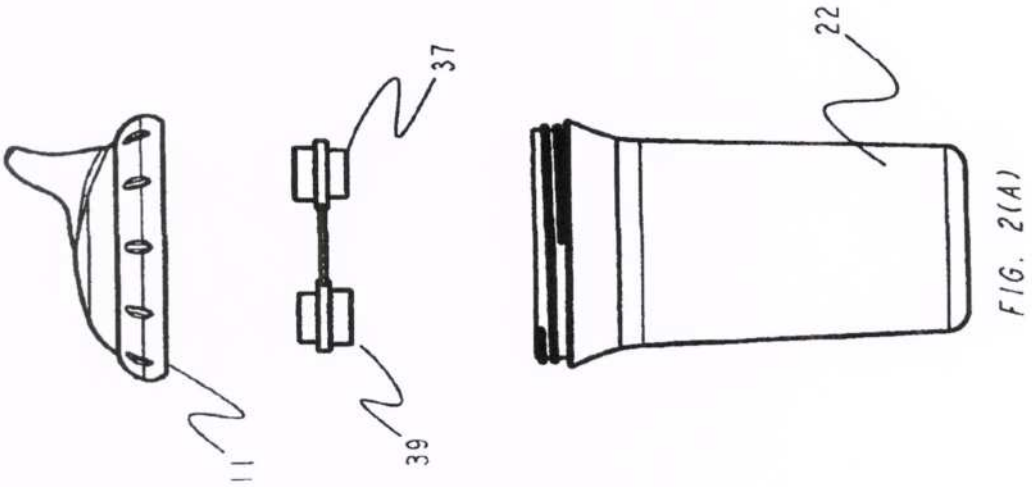


FIG. 2(A)

FIGURE 2

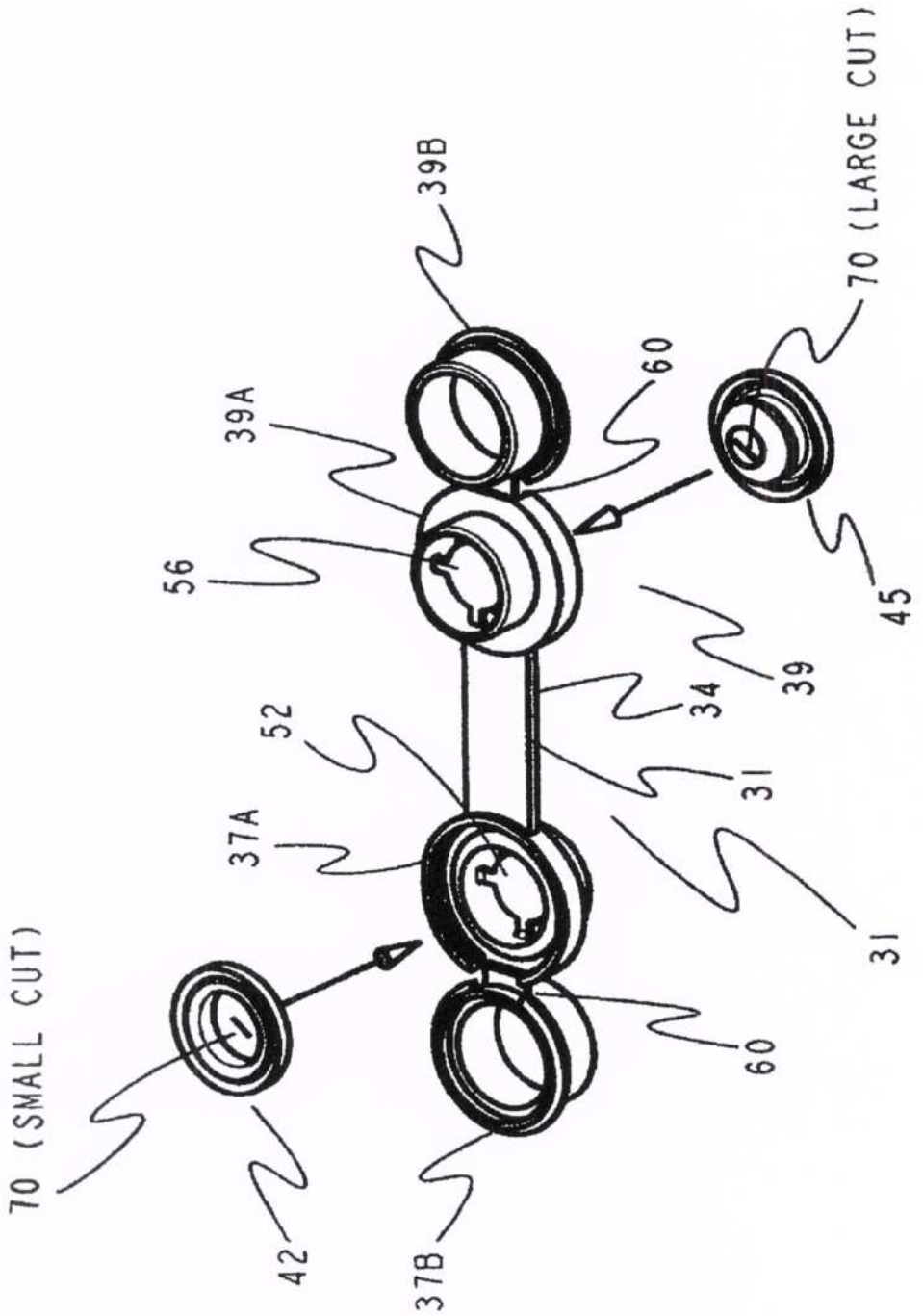
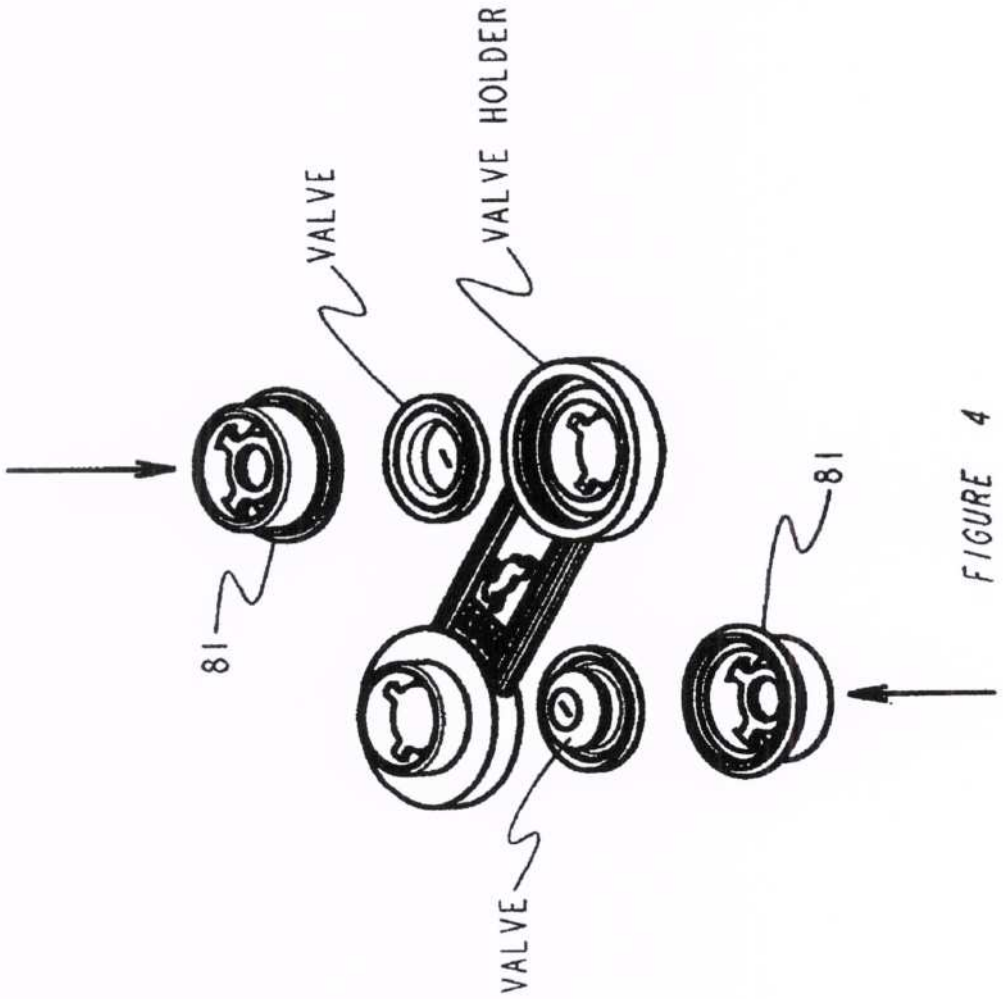

70 (SMALL CUT)
42
37B
60
31
31
37A
52
34
39
56
39A
39B
60
70 (LARGE CUT)
45

FIGURE 3



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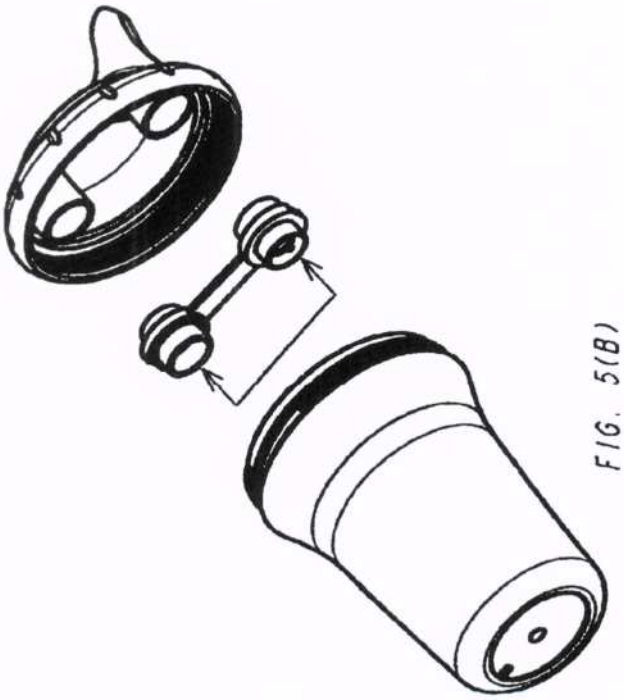


FIG. 5(B)

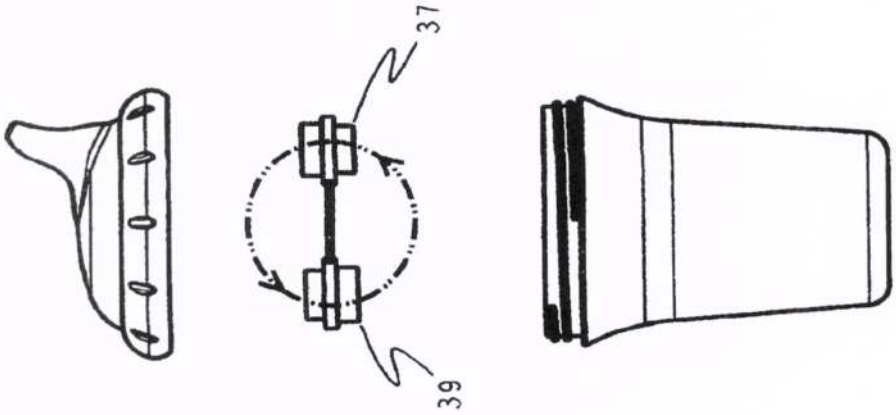


FIG. 5(A)

FIGURE 5

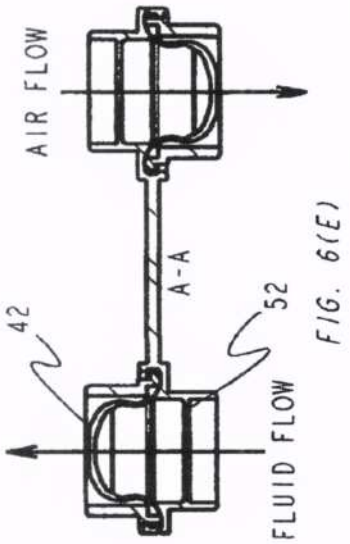


FIG. 6(E)

FIG. 6(C)

FIGURE 6

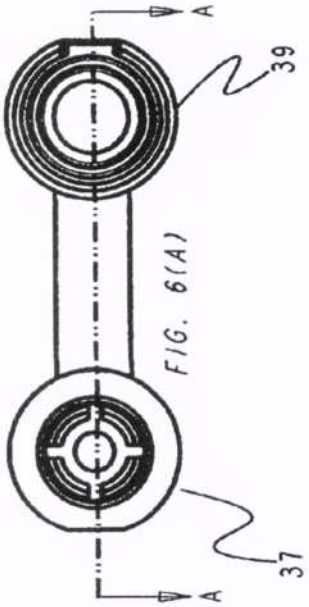


FIG. 6(A)

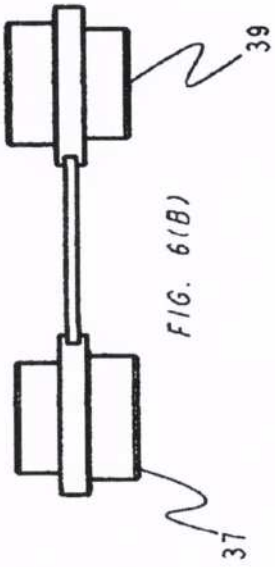


FIG. 6(B)

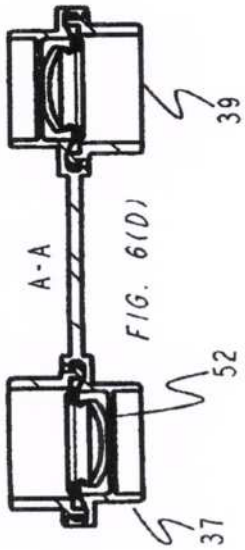


FIG. 6(D)

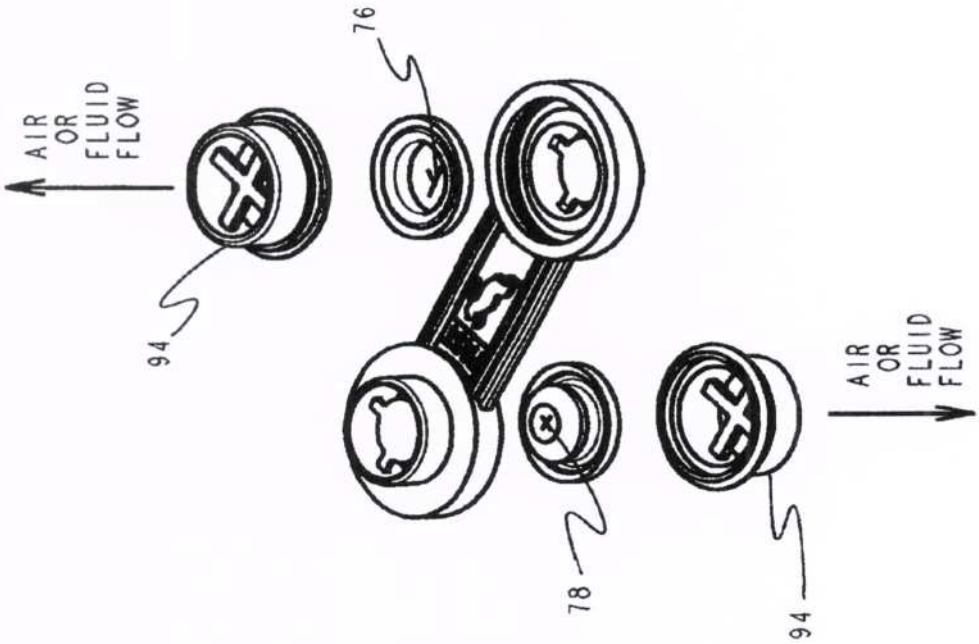


FIGURE 7

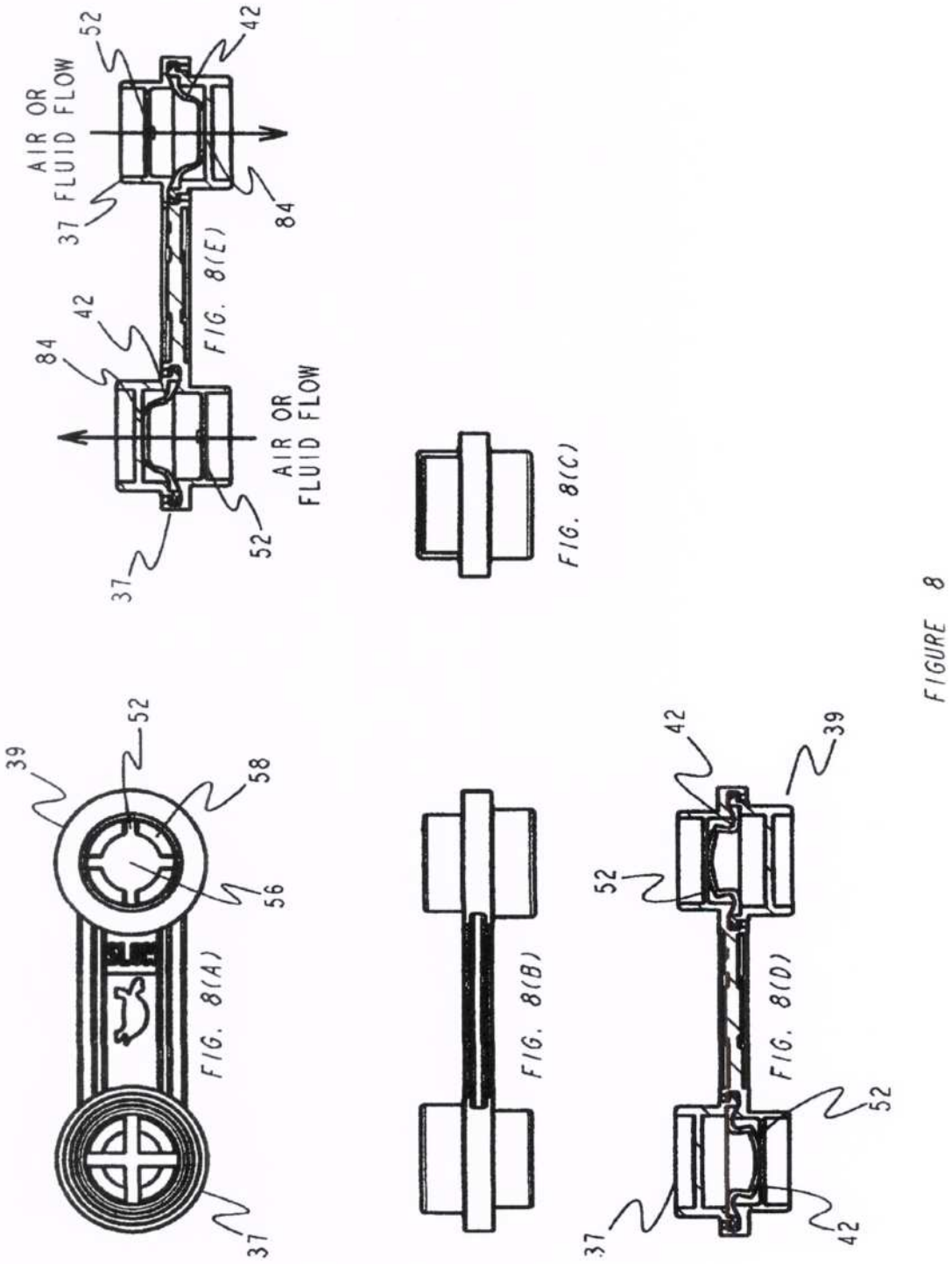

AIR OR FLUID FLOW
52
42
37
84
FIG. 8(E)
AIR OR FLUID FLOW
FIG. 8(C)
39
58
56
FIG. 8(A)
FIG. 8(B)
FIG. 8(D)

FIGURE 8

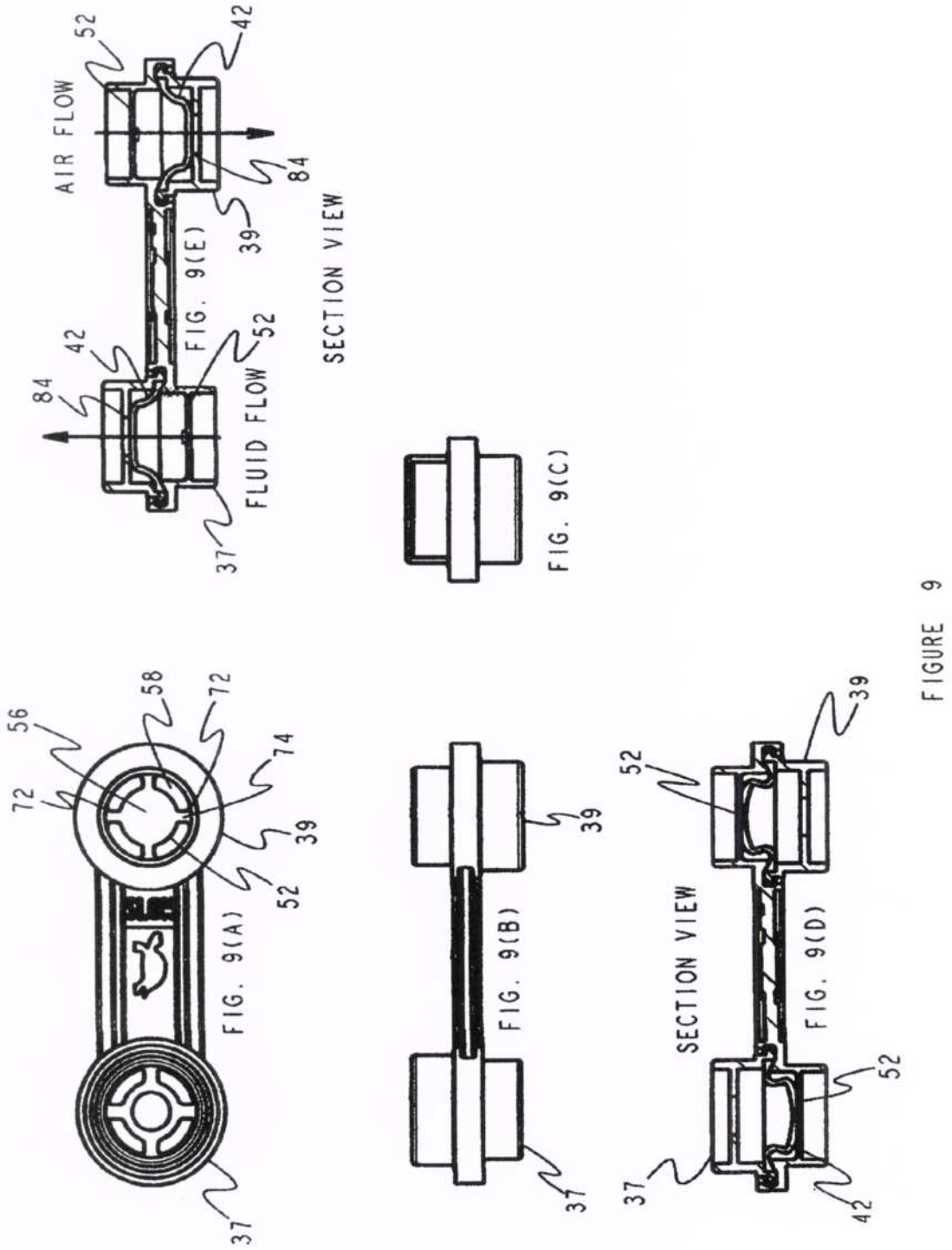

AIR FLOW
52
42
84
39
FIG. 9(E)
SECTION VIEW
42
84
52
FLUID FLOW
37
FIG. 9(C)
56
58
72
74
72
39
52
FIG. 9(A)
37
FIG. 9(B)
39
37
52
39
SECTION VIEW
FIG. 9(D)
52
37
42

FIGURE 9

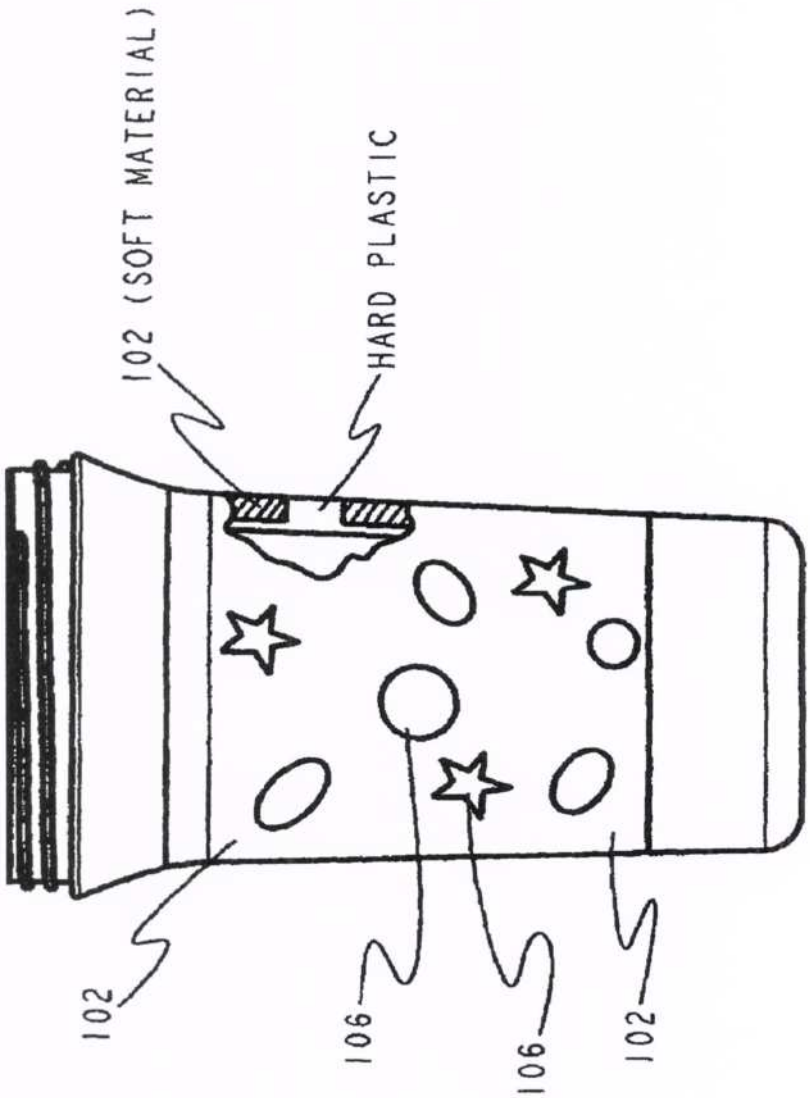


FIGURE 10

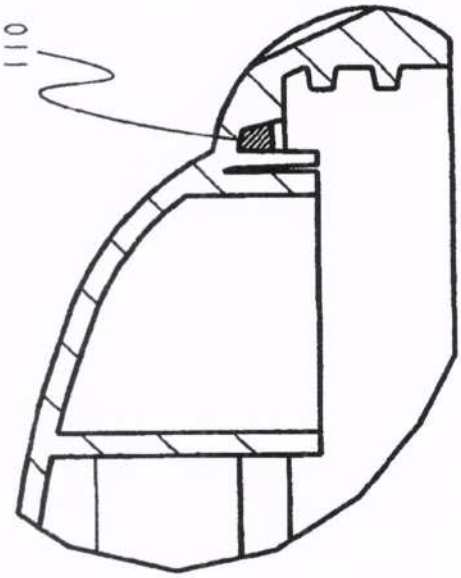
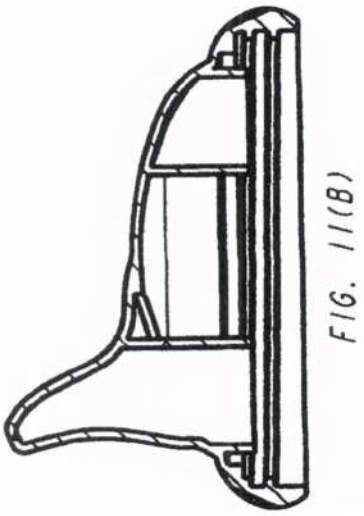


FIG. 11(A)



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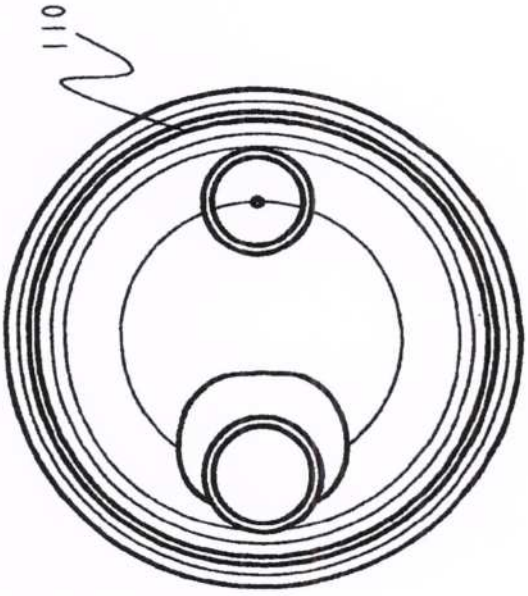

FIG. 11(C)

FIGURE 11